

PATENT APPLICATION

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q91286

Toshiaki KASHIHARA, et al.

Appln. No.: 10/560,244

Group Art Unit: 2834

Confirmation No.: 4994

Examiner: Karl I. Tamai

Filed: December 12, 2005

For: ALTERNATOR FOR A VEHICLE HAVING INSULATION LAYERS

REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellant respectfully submits this Reply Brief in response to the Examiner's Answer dated October 22, 2010. Entry of this Reply Brief is respectfully requested.

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STATUS OF CLAIMS

Claims 1, 4-6, 10, and 13-16 are pending and are the subject of this appeal.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

There are five issues on Appeal.

- 1) Whether claims 1, 4, 13, and 15 are improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita et al. (US 2002/0043886), hereinafter referred to as “Fujita” and Oohashi et al. (US 2003/0015932), hereinafter referred to as “Oohashi” in view of Ohashi et al. (US 6,018,205), hereinafter referred to as “Ohashi”.
- 2) Whether claim 5 is improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, Ohashi, in view of Asao et al. (US 6,281,612), hereinafter referred to as “Asao”.
- 3) Whether claims 6 and 10 are improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, and Ohashi, in view of Oohashi et al. (US 2002/0096958), hereinafter referred to as “Oohashi ‘958”.
- 4) Whether claim 14 is improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, and Ohashi, in view of Yumiyama et al (US 5,587,619), hereinafter Yumiyama, and
- 5) Whether claim 16 is improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, and Ohashi, in view of Oohashi et al. (US 6,417,585), hereinafter referred to as “Oohashi ‘585”.

ARGUMENT

In addition to the arguments set forth in the Appeal Brief, Appellant responds to certain points made in the Examiner's Answer as follows.

At least initially, Appellant addresses the *35 U.S.C. § 103(a)* rejection of claims 1, 4, 13, and 15 as being unpatentable over Fujita and Oohashi et al. in view of Ohashi.

A. Exemplary Features of Claim 1 and Argument for traversing the rejection of claim 1

Independent claim 1 *inter alia* recites:

1. a housing directly supporting a periphery of the stator core and protecting the electrical conductor, wherein the stator core is constituted by laminated core having a plurality of slots each extending to an axial direction, the electrical conductor is comprised of a slot-in portion located in the slots and a cross-over portion connecting each of the slot-in portions at the shaft end side of the stator,
2. wherein the conductor is formed of a previously coated insulated wire and the slot-in portion of the conductor is molded to be substantially rectangular in its cross-sectional profile before it is entered in the slots so that at least a longer side portion of the conductor of the slot-in portion located in the slots has an insulation coating of which thickness is smaller than that of insulation coating in the cross-over portion, and
3. wherein the slot-in portions of the conductor are accumulated in the slots so that a longer side thereof is being in the radial direction without any air space and a shorter side thereof in a circumferential direction, and the cross-over portion is kept substantially circular in its cross-sectional profile without being molded,
4. wherein the periphery of the cross-over portion is protected by the housing and the laminated core is directly held by the housing made of metal, and

5. wherein the periphery of the housing is provided with a plurality of ribs and charging air holes or discharging air holes formed between the ribs.

The above exemplary features are based on the non-limiting exemplary embodiments discussed with reference to FIGS. 1, 2, 4, 7, and 8. In particular, FIG. 7 illustrates that a longer side of the slot-in portions 44a is in a radial direction of the generator and a shorter side is in the circumferential direction. Furthermore, the slot-in portions 44a are installed in slot 41c such that no air gap exists between them in a circumferential direction. *See last two paragraphs on page 12 of the specification.* The above exemplary features allow heat generated by armature windings to be easily transmitted to the laminated core through a thinner insulated coating and dissipated in the radial direction to the housing through the periphery of the laminated core, resulting in further enhancement of the output power and efficiency of the generator.

The Examiner alleges that where the slot-in portions of the conductor are accumulated in the slots so that a longer side thereof is being in the radial direction without any air space as set forth in claim 1 is described in [0165] of Oohashi which indicates that the coils are in close contact with the side wall of the slot to dissipate heat into the core. *See page 14 of the Examiner's Answer.*

Appellant respectfully submits that “in close contact” does not mean that there are no air spaces. In an exemplary embodiment, cooling effects of the insulating coated electrical conductor are efficiently improved by having the slot-in portions accumulated in the slots so that a longer side thereof in the radial direction is without any air space. In Oohashi, there is no disclosure or suggestion that there are no air spaces.

As acknowledged by the Examiner on page 5 of the Examiner's Answer, Fujita does not disclose the above feature. Furthermore, Ohashi does not remedy this deficiency of Fujita and Ohashi. Therefore, none of the cited references teach the above feature of claim 1.

Accordingly, claim 1 should be patentable over Fujita in view of Oohashi and Ohashi. Appellant respectfully requests the Board to reverse the rejection of claim 1 and its dependent claims 4, 13, and 15.

B. Additional Arguments for Dependent Claim 13

Dependent claim 13 recites: "the insulation coated electrical conductor has a diameter of 1.6 mm for the cross-over portion, and the insulation coated electrical conductor is flattened into one direction to a thickness of 1.3 mm for the slot-in portion."

The Examiner alleges that Fujita describes that the diameter of the portions are a result effective variable and as such these parameters would have been obvious to optimize the expense of the generator with the current carry capacity of the generator. The grounds of rejection dismiss the values set forth in claim 13 as "involving only routine skill in the art." *See page 10 of the Examiner's Answer.*

Appellant submits that none of the cited references identify actual dimensions of the parameters of interest. Therefore, routine experimentation to come up with the claimed specific dimensions would not be suggested by the cited references. Furthermore, using Fujita's technique, the cost may be reduced because conductors of an approximately circular cross section are inexpensive. *See [0150] of Fujita.* In other words, Fujita suggests optimizing shape and not the size of the conductor.

Therefore, even assuming *arguendo* that dimensions similar to those recited in claim 13 were known to one of ordinary skill in the art, Fujita would not provide any reason to modify those dimensions to arrive at the claimed dimensions.

For at least these additional exemplary reasons, therefore, dependent claim 13 should be patentable over Fujita in view of Oohashi and Ohashi.

Appellant also addresses the following additional issues.

Claim 5 is improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, Ohashi, in view of Asao et al. (US 6,281,612), hereinafter referred to as "Asao". Claims 6 and 10 are improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, and Ohashi, in view of Oohashi et al. (US 2002/0096958), hereinafter referred to as "Oohashi '958". Claim 14 is improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, and Ohashi, in view of Yumiyama et al (US 5,587,619), hereinafter "Yumiyama," and claim 16 is improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita, Oohashi, and Ohashi, in view of Oohashi et al. (US 6,417,585), hereinafter referred to as "Oohashi '585". Appellant respectfully traverses these grounds of rejections at least in view of the following exemplary comments.

Claims 5, 6, 10, 14, and 16 depend on claim 1. It was already demonstrated that Fujita in view of Oohashi and Ohashi do not meet all the features of independent claim 1. Neither Asao, Oohashi '958, Yumiyama, and Oohashi '585, independently or in combination, address this deficiency of Fujita in view of Oohashi and Ohashi. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved

the subject matter of claim 1. Since claims 5, 6, 10, 14, and 16 depend on claim 1, they are patentable at least by virtue of their dependency.

CONCLUSION

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,

/Chetan Bansal/ (L0667)

for

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Nataliya Dvorson
Registration No. 56,616

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

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